

Appl. No. : 10/824,933
Filed : April 15, 2004

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A verifiable sample element for use with an analyte detection system, the sample element comprising:

first and second substantially parallel faces, the parallel faces at least partially defining a sample chamber configured to hold a volume of sample fluid, the sample chamber being reagentless;

an optical path extending through the parallel faces and the sample chamber, such that electromagnetic radiation can propagate through the sample chamber; and

an optical key for qualifying the sample element for use with a particular analyte detection system, the optical key comprising:

an identifying compound disposed within or on at least one of the parallel faces of the sample chamber, the sample element configured such that the identifying compound does not intermingle with the sample fluid, the identifying compound also disposed in the optical path such that the electromagnetic radiation passes through the identifying compound as the radiation propagates through the sample chamber;

at least a portion of a spectral scan of the identifying compound stored in the analyte detection system;

the identifying compound having at least one indexed optical absorbance feature, such that the spectral scan generated by electromagnetic radiation propagated through the parallel face having the identifying compound therein or thereon yields the indexed optical absorbance feature;

~~the identifying compound being disposed within or on at least one of the parallel faces and separated from the sample chamber such that the identifying compound does not intermingle with the sample fluid.~~

2. (ORIGINAL) The sample element of Claim 1, wherein the first and second substantially parallel faces are at least partially transmissive to electromagnetic radiation.

3. (ORIGINAL) The sample element of Claim 1, wherein the parallel faces are at least partially transmissive to infrared electromagnetic radiation.

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4. (CURRENTLY AMENDED) The sample element of Claim 1, wherein the indexed optical absorbance feature is adjacent to or overlapping an absorbance feature of an analyte detectable in the sample fluid by the analyte detection system.

5. (ORIGINAL) The sample element of Claim 4, wherein the analyte detectable by the analyte detection system is glucose.

6. (ORIGINAL) The sample element of Claim 1, wherein the indexed optical absorbance feature is an absorbance maximum or an absorbance minimum.

7. (ORIGINAL) The sample element of Claim 1, wherein the identifying compound is a hydrocarbon.

8. (ORIGINAL) The sample element of Claim 1, wherein the identifying compound is a coating on at least a portion of the sample element.

9. (CURRENTLY AMENDED) A sample element that is verifiable as approved for use with a detection system, the sample element comprising:

an optical path for determining analyte concentration; and

an identification key in the optical path for verifying that the sample element is approved, the identification key comprising ~~a physical~~ an optical property of the sample element.

10. (CURRENTLY AMENDED) The sample element of Claim 9, wherein the ~~optical~~ physical property is an optical absorption of a window in the optical path.

11. (CURRENTLY AMENDED) The sample element of Claim 9, wherein the ~~optical~~ physical property corresponds to ~~is~~ a thickness of a window in the optical path.

12. (CURRENTLY AMENDED) The sample element of Claim 9, wherein the ~~optical~~ physical property corresponds to ~~is~~ a thickness of said sample chamber in the optical path.

13. (CURRENTLY AMENDED) The sample element of Claim 9, wherein the ~~optical~~ physical property corresponds to ~~is~~ a background optical absorbance spectrum of the optical path.

14. (CURRENTLY AMENDED) A sample element for use with an analyte detection system, the sample element comprising:

a reagentless sample chamber; and

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an identification key that is located within or on the sample element in an optical path for analyte measurement, the identification key configured to indicate to the analyte detection system a qualification state of the sample element.

15. (ORIGINAL) The sample element of Claim 14, wherein the identification key is configured to indicate a qualification state in which the sample element is configured for use with the analyte detection system.

16. (CURRENTLY AMENDED) The sample element of Claim 14, wherein the identification key comprises a compound that is distinct from the sample, the compound having an optical absorbance spectrum with a qualifying optical absorbance feature.

17. (CURRENTLY AMENDED) The sample element of Claim 16, wherein the qualifying optical absorbance feature has an optical signature that is adjacent to or overlapping an optical signature of an absorbance feature of an analyte detectable in the sample fluid by the analyte detection system, as determined when a sensor is used to generate a scan of absorbed radiation.

18. (ORIGINAL) The sample element of Claim 17, wherein the analyte detectable by the analyte detection system is glucose.

19. (ORIGINAL) The sample element of Claim 16, wherein the qualifying optical absorbance feature is an absorbance maximum or an absorbance minimum.

20. (ORIGINAL) The sample element of Claim 16, wherein the compound comprises a hydrocarbon.

21. (CANCELLED)

22. (CANCELLED)

23. (CANCELLED)

24. (ORIGINAL) The sample element of Claim 14, wherein the identification key comprises an identification medium within or applied on the sample element.

25. (CANCELLED)

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27. (CANCELLED)

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30. (CANCELLED)

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31. (CURRENTLY AMENDED) A method for determining an analyte concentration in a material sample disposed in a qualifiable sample element and avoiding use of unapproved sample elements, the method comprising:

inserting the material sample into a sample element;

receiving the sample element in an analyte detection system;

after said receiving, emitting radiation along an optical path, the optical path for determining analyte concentration;

after said receiving, qualifying the sample element to determine whether the sample element is of a type which is suitable for use with the analyte detection system, qualifying the sample element comprising optically determining a characteristic of the portion of the sample element in the optical path;

if the sample element is of a type which is suitable for use with the analyte detection system, analyzing an optical property of the material sample; and

if the sample element is not of a type which is suitable for use with the analyte detection system, refusing to analyze an optical property of the material sample.

32. (ORIGINAL) The method of Claim 31, wherein qualifying the sample element comprises checking whether an element qualifying structure of the sample element can be engaged with a corresponding structure of the analyte detection system.

33. (ORIGINAL) The method of Claim 32, wherein the element qualifying structure comprises a grooved portion and the corresponding structure comprises a tongue portion, such that the tongue portion engages the grooved portion when the sample element is coupled to the analyte detection system.

34. (ORIGINAL) The method of Claim 31, wherein qualifying the sample element comprises:

measuring an optical absorbance spectrum of the sample element; and

analyzing the measured optical absorbance spectrum for a qualifying absorbance feature.

35. (ORIGINAL) The method of Claim 34, wherein the qualifying absorbance feature is an absorbance maximum or an absorbance minimum.

36. (ORIGINAL) The method of Claim 31, wherein qualifying the sample element comprises reading at least one datum from an identification medium.

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37. (ORIGINAL) The method of Claim 36, wherein qualifying the sample element further comprises checking whether the datum corresponds to a datum stored in the analyte detection system.

38. (CANCELLED)

39. (CANCELLED)

40. (ORIGINAL) The method of Claim 31, wherein qualifying the sample element comprises electronically connecting an electrical conductor of the sample element to the analyte detection system.

41. (PREVIOUSLY PRESENTED) The sample element of Claim 9, further comprising:

a reagentless sample chamber in said optical path.

42. (CURRENTLY AMENDED) A method for optically qualifying a sample element, the method comprising:

receiving a sample element in an analyte detection system;

after said receiving, optically qualifying the sample element by emitting radiation along an optical path through the sample element to determineing whether the sample element is of a type which is suitable for use with the analyte detection system;

if the sample element is of a type which is suitable for use with the analyte detection system, analyzing an optical property of the material sample by emitting radiation along the same optical path used to qualify the sample element; and

if the sample element is not of a type which is suitable for use with the analyte detection system, refusing to analyze an optical property of the material sample.

43. (PREVIOUSLY PRESENTED) The method of Claim 42, wherein qualifying the sample element by determining whether the sample element is of a type which is suitable for use with the analyte detection system comprises:

determining whether the sample element is an authorized sample element.

44. (CURRENTLY AMENDED) The method of Claim 42, ~~wherein qualifying the sample element by determining whether the sample element is of a type which is suitable for use with the analyte detection system comprises determining whether the sample element is an authorized sample element~~ wherein emitting radiation results in an absorption spectrum and

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45. (CANCELLED)

46. (PREVIOUSLY PRESENTED) The sample element of Claim 1, wherein the identifying compound is based on a sample element parameter that affects the accuracy of analyte concentration readings.

47. (PREVIOUSLY PRESENTED) The sample element of Claim 9, wherein the identification key is based on a sample element parameter that affects the accuracy of analyte measurements.

48. (PREVIOUSLY PRESENTED) The sample element of Claim 14, wherein the identification key is based on a sample element parameter that affects the accuracy of analyte measurements.

49. (NEW) The sample element of Claim 24, wherein the identification medium comprises a transmissive structure disposed adjacent the reagentless sample chamber.

50. (NEW) The sample element of Claim 49, wherein the transmissive structure comprises a hydrocarbon.

51. (NEW) The method of Claim 42, wherein emitting radiation along an optical path through the sample element comprises emitting radiation through a window doped with a hydrocarbon.